YEAR 9 – REASONING WITH GEOMETRY...

Pythagoras' theorem

@whisto_maths

What do I need to be able to do?

By the end of this unit you should be able to:

- Use square and cube roots
- Identify the hypotenuse
- Calculate the hypotenuse
- Find a missing side in a Right angled triangle
- Use Pythagoras' theorem on axes
- Explore proofs of Pythagoras' theorem

Keywords

Square number: the output of a number multiplied by itself
Square root: a value that can be multiplied by itself to give a square number
Hypotenuse: the largest side on a right angled triangle. Always opposite the right angle.
Opposite: the side opposite the angle of interest
Adjacent: the side next to the angle of interest

Squares and square roots (R)

This can also be written as 6^2

$\sqrt{\ }$ is the square root symbol

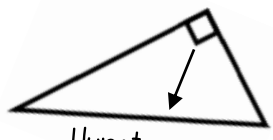
e.g $\sqrt{64} = 8$

Because $8 \times 8 = 64$

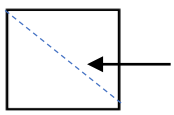
1 × 1	2 × 2	3 × 3	4 × 4	5 × 5	6 × 6	7 × 7	8 × 8	9 × 9	10 × 10
1	4	9	16	25	36	49	64	81	100

Square numbers

Identify the hypotenuse

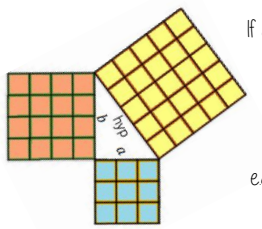


The hypotenuse is always the longest side on a triangle because it is opposite the biggest angle.



Polygons can still have a hypotenuse if it is split up into triangles and opposite a right angle

Determine if a triangle is right-angled



a = 3 b = 4 c = 5

If a triangle is right-angled, the sum of the squares of the shorter sides will equal the square of the hypotenuse.

$$a^2 + b^2 = \text{hypotenuse}^2$$

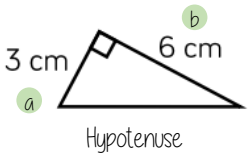
e.g $a^2+b^2 = hypotenuse^2$

$3^2 + 4^2 = 5^2$

$9 + 16 = 25$

Substituting the numbers into the theorem shows that this is a right-angled triangle

Calculate the hypotenuse



Either of the short sides can be labelled a or b

$$a^2 + b^2 = \text{hypotenuse}^2$$

1 Substitute in the values for a and b

$3^2+6^2 = \text{hypotenuse}^2$

$9 + 36 = \text{hypotenuse}^2$

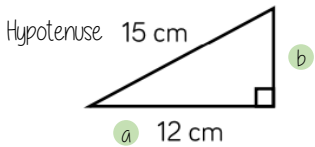
$45 = \text{hypotenuse}^2$

2 To find the hypotenuse square root the sum of the squares of the shorter sides

$\sqrt{45} = \text{hypotenuse}$

$6.71cm = \text{hypotenuse}$

Calculate missing sides



Either of the short sides can be labelled a or b

$$a^2 + b^2 = \text{hypotenuse}^2$$

$12^2+b^2 = 15^2$

1 Substitute in the values you are given

$144 + b^2 = 225$

$-144 \quad -144$

Rearrange the equation by subtracting the shorter square from the hypotenuse squared

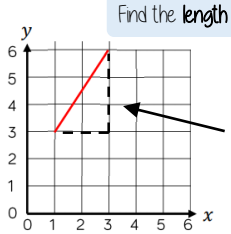
Square root to find the length of the side

$b^2 = 111$

$b = \sqrt{111} = 10.54\ cm$

Pythagoras' theorem on a coordinate axis

Find the **length** of the line segment



The segment can be made into a right-angled triangle by adding the sides on the diagram.

The line segment is the **hypotenuse**

$$a^2 + b^2 = \text{hypotenuse}^2$$

The lengths of a and b are the sides of the triangle.

Be careful to check the scale on the axes

YEAR 9 – REASONING WITH GEOMETRY...

Enlargement & Similarity

@whisto_maths

What do I need to be able to do?

By the end of this unit you should be able to:

- Recognise enlargement and similarity
- Enlarge a shape by a positive SF
- Enlarge a shape from a point
- Enlarge a shape by a fractional SF
- Work out missing sides and angles in a pair of similar shapes

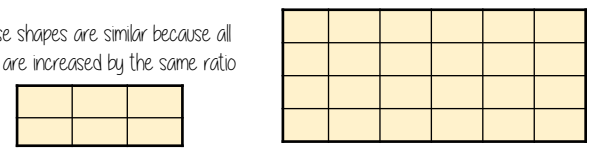
Keywords

Similar Shapes: shapes of different sizes that have corresponding sides in equal proportion and identical corresponding angles.
Scale Factor: the multiple describing how much a shape has been enlarged
Enlarge: to change the size of a shape (enlargement is not always making a shape bigger)
Corresponding: objects (or sides) that appear in the same place in two similar situations.
Image: the picture or visual representation of the shape

Recognise enlargement & similarity

Shapes are similar if all pairs of corresponding sides are in the same ratio

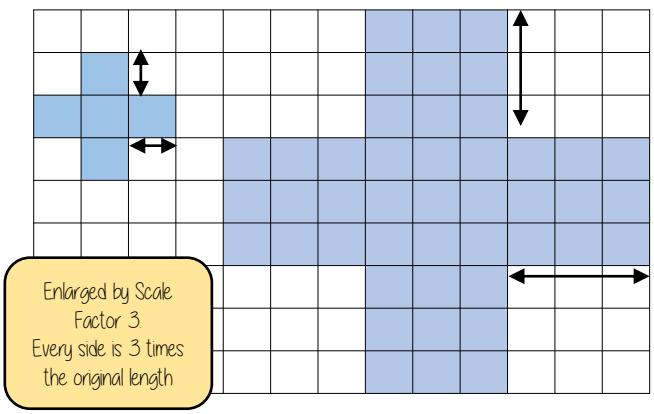
These shapes are similar because all sides are increased by the same ratio



Enlargements are similar shapes with a ratio other than 1

Enlarge by a positive scale factor

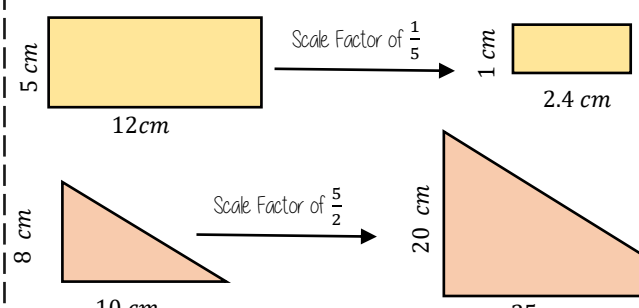
With a scale factor larger than 1 it makes the shape **bigger**



Enlarged by Scale Factor 3.
Every side is 3 times the original length

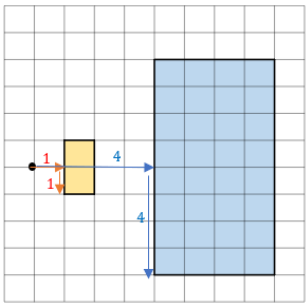
Positive fractional scale factor

With a scale factor between 0 and 1 it makes the shape **smaller**



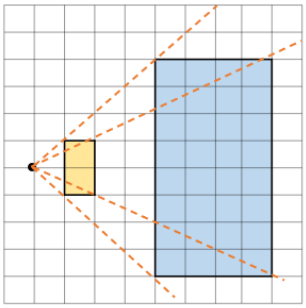
Enlarge a shape from a point

Scaled distances method



Scale the distance between the point of enlargement and each corresponding vertices

Rays method

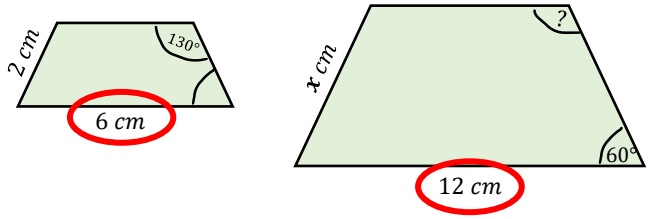


Multiply the distance from the centre of corresponding vertices by the scale factor along the ray

Calculations in similar shapes

Don't forget that properties of shapes don't change with enlargements or in similar shapes

The two trapezium are similar find the missing side and angle



Corresponding sides identify the scale factor $\frac{12}{6} = 2$ Scale Factor = **2**

Calculate the missing side Length (corresponding side) x scale factor

$2cm \times 2$

$x = 4cm$

Enlargement does not change angle size

Calculate the missing angle Corresponding angles remain the same

$130°$

YEAR 9 – REASONING WITH GEOMETRY...

Solving ratio & proportion problems

@whisto_maths

What do I need to be able to do?

By the end of this unit you should be able to:

- Solve problems with direct proportion
- Use conversion graphs
- Solve problems with inverse proportion
- Solve ratio problems
- Solve 'best buy' problems

Keywords

Proportion: a comparison between two numbers
Ratio: a ratio shows the relative size of two variables
Direct proportion: as one variable is multiplied by a scale factor the other variable is multiplied by the same scale factor.
Inverse proportion:: as one variable is multiplied by a scale factor the other is divided by the same scale factor.

Direct Proportion

R

As one variable changes the other changes at the same rate.

This is a multiplicative change

4 cans of pop = £2.40

4 cans of pop = £2.40 → 2 cans of pop = £1.20 (×0.5)

This multiplier is the same In the same way that this would be for ratio

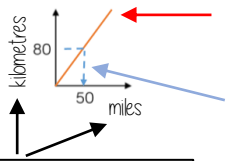
4 cans of pop = £2.40 → 12 cans of pop = £7.20 (×3)

Sometimes this is easiest if you work out how much one unit is worth first
e.g. 1 can of pop = £0.60

Conversion Graphs

Compare two variables

R



This is always a straight line because as one variable increases so does the other at the same rate

Labelling of both axes is vital

To make conversions between units you need to find the point to compare – then find the associated point by using your graph
Using a ruler helps for accuracy
Showing your conversion lines help as a "check" for solutions

Inverse Proportion

As one variable is multiplied by a scale factor the other is divided by the same scale factor

Examples of inversely proportional relationships

Time taken to fill a pool and the number of taps running

Time taken to paint a room and the number of workers

T is inversely proportional to G. When T=2 then G=20

T	1	2	8
G	40	20	5

(÷ 2 / × 4 above; × 2 / ÷ 4 below)

Best Buys

Have a directly proportional relationship

To calculate best buys you need to be able to compare the cost of one unit or units of equal amounts

	Shop A	Shop B
	4 cans for £1.20	3 cans for 93p
	£1.20 ÷ 4	£0.93 ÷ 3
Cost per item	1 can is £0.30 Or 30p	1 can is £0.31 Or 31p

Shop A is the best value as it is 1p cheaper per can of pop

	Shop A	
	4 cans for £1.20	3 cans for 93p
	4 ÷ £1.20	3 ÷ £0.93
Cost per pound	£1 buys 3.333 cans of pop	£1 buys 3.23 cans of pop

Shop A is still shown as being the best value but pay attention to the unit you are calculating, per item or per pound.

Best value is the most product for the lowest price per unit

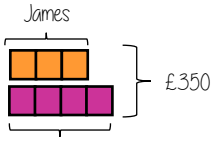
Sharing a whole into a given ratio

R

James and Lucy share £350 in the ratio 3:4
Work out how much each person earns

Model the Question

James : Lucy
3 : 4



Find the value of one part

Whole: £350
7 parts to share between
(3 James, 4 Lucy)

£350 ÷ 7 = £50

□ = one part
= £50

Put back into the question

James : Lucy
(×50) 3 : 4 (×50)
£150 : £200

James = 3 x £50 = £150
Lucy = 4 x £50 = £200

Finding a value given 1:n (or n:1)

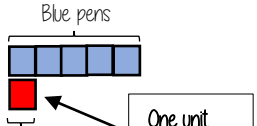
R

Inside a box are blue and red pens in the ratio 5:1
If there are 10 red pens how many blue pens are there?

Model the Question

Blue : Red
5 : 1

□ = one part
= 10 pens



Put back into the question

Blue : Red
(×10) 5 : 1 (×10)
50 : 10

Blue pens = 5 x 10 = 50 pens
Red pens = 1 x 10 = 10 pens

There are 50 Blue Pens

Year 9 GCSE Science Term Knowledge Organiser – Home Electricity

Key Vocabulary:

1	**Alternating Current (A.C)**	Alternating current reverses direction continually.
2	**Direct Current (D.C.)**	Direct current travels in one direction only.
3	**Fossil Fuel**	Non-renewable energy resources, formed from the remains of living things.
4	**Frequency**	The frequency of a wave is the number of waves that pass a point in one second.
5	**Fuse**	A fuse is a safety device that prevents a high current from flowing through the circuit.
6	**Live Wire**	The wire that goes from the power source to an appliance.
7	**National Grid**	A system of cables, pylons and transformers which transfers electrical power from power stations to people's homes.
8	**Neutral Wire**	The wire that goes from the appliance back to the power source to complete the circuit.
9	**Power**	The rate at which energy is transferred or work is done.
10	**Renewable (energy resource)**	A renewable energy resources is one that is being (or can be) replenished as it is used.
11	**Resistance**	Opposition to the flow of charge.
12	**Static electricity**	The build-up of electrical charge on an object.
13	**Step-down transformer**	A part of the national grid, which decreases the potential difference to make electricity safe to use.
14	**Step-up transformer**	A part of the national grid, which increases the potential difference to transfer electricity more efficiently.

15 Mains Electricity

1. Voltage can also be called potential difference
2. Potential difference is measured in Volts (V) using a voltmeter.
3. A simple circuit has two wires - a live wire and a neutral wire.
4. The live wire (brown) goes from the power source to the appliance.
5. The neutral wire (blue) goes from the appliance back to the power source to complete the circuit.

It is important to have a switch attached to the live wire so that when an appliance or socket is switched off it is not live.

16 Direct & Alternating Current

1. Direct current (d.c.) travels in one direction only.
2. Cells and batteries supply direct current.
3. Alternating current (a.c.) continually reverses direction.

17 Plugs

1. In the UK, most appliances use a three-core cable.
2. The neutral wire is blue, the live wire is brown, and the earth wire is green and yellow.
3. The earth wire is a safety feature and is not needed to complete the circuit.
4. The earth wire connects to the case of the appliance, so that if a loose wire touches it, the case will not conduct electricity.

18 Energy Resources

1. Fossil fuels are non-renewable energy resources. Examples include coal, oil and natural gas.
2. Fossil fuels can be burned to heat water, which produces steam. The steam turns a turbine, which powers a generator (to generate electricity).
3. Nuclear energy is obtained by the splitting up of atomic nuclei. Examples include Uranium & Plutonium.
4. A renewable energy resource is one that is being (or can be) replenished as it is used. Examples include biofuels, wind.

19 Power

1. The function of an appliance is to bring about an energy transfer.
2. The amount of energy an appliance transfers depends on how long it is switched on for, and the power of the appliance.
3. Power is the rate at which energy is transferred or work is done.

Measured in Watts (W) ← $\text{Power} = \frac{\text{Energy}}{\text{Time}}$ → Measured in Joules (J), Measured in seconds (s)

$$P = \frac{E}{t}$$

4. Watt of power = 1 joule of energy transferred each second.

Energy transferred = Power x Time

$$E = P \times t$$

20 The Cost of Electricity

When we say we are 'using electricity', we are using energy which has been transferred electrically.

Electricity meters measure the number of units of electricity (energy) used in a home or building. The more units used, the greater the cost.

When calculating the cost of electricity, we calculate energy transferred in kilowatt-hours (kWh). kWh is a unit of energy transferred.

Energy transferred = Power x Time
Units (kWh) = power (kW) × time (h)

Total cost = number of units × cost per unit
Units (kWh)

We can also calculate power if we know the current flowing through an appliance and the p.d. across it

Measured in Amps (A), Measured in Watts (W), Measured in Volts (V)

Power = Current x Potential Difference

$$P = I V$$

We know that

$E = P \times t$ and $P = I V$

Putting these together we see that..

$$E = I \times V \times t$$

Which can also be written as..

$$E = I t V$$

To calculate the energy transferred by an appliance we use the equation:

Energy (Joules) = Power (Watts) x time (seconds)
E (J) = P (W) x t (s)

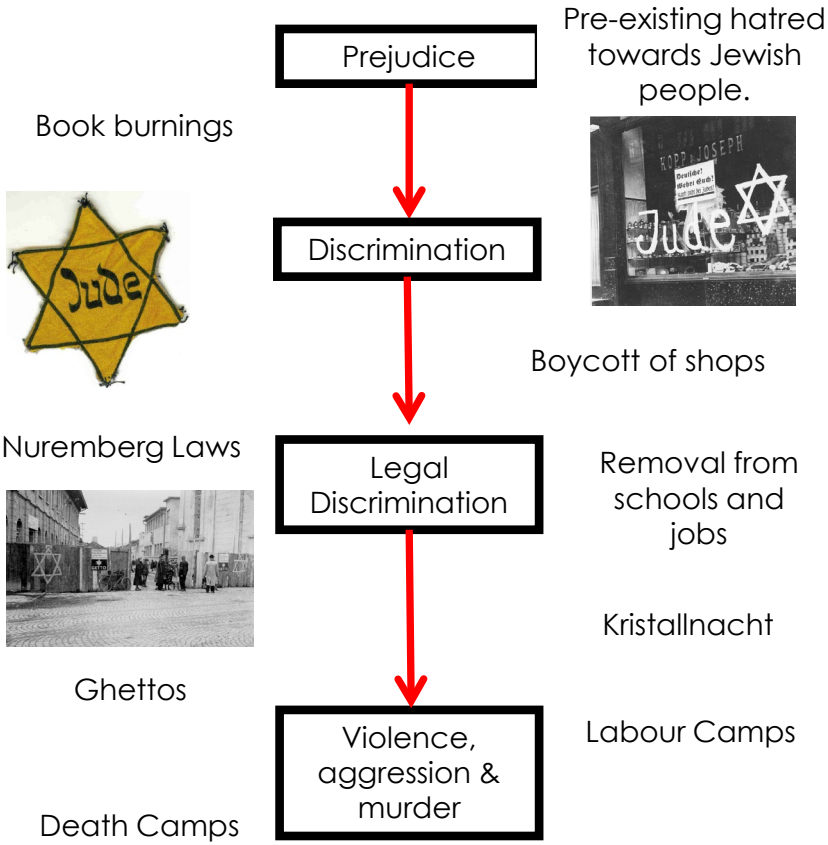
We can also use the equation:

Energy (Joules) = Charge flow (Coulombs) x Potential difference (Volts)
E (J) = Q (C) x V (V)

Adjective:	A word which describes a noun
Adverb:	A word which describes a verb
Analytical Verb:	Language to use in your analysis: the writer *suggests* / indicates / implies / emphasises
Audience:	Who the text is specifically aimed at
Authorial Intent:	The writer's goals or ambitions for how readers will respond and react to the text
Connotations:	The links or associations you have with a word
Context:	Thinking about what the world was like when a text was written, and how that influenced it
Convention:	Typical traits you would find in a specific kind of text
Dialogue:	A scripted conversation between two or more characters
Dramatic Irony:	When a readers/audience knows something that a character in the text does not know themselves
Ethos:	A persuasive device: the use of your character, credibility and experience to persuade someone
Femininity:	Traits associated with being a female.
Great Chain of Being:	A belief system which ranks people in relation to their spirituality or godliness
Inference:	What you can work out from the text – reading between the lines
Juxtaposition:	Opposing or contrasting ideas nearby each other in a text
Logos:	A persuasive device: the use of logic or facts to persuade someone
Masculinity:	Traits associated with being 'manly'
Metaphor:	Figurative language: making a comparison saying something *is* something else (e.g. the moon is a ship in the sky)
Monologue:	A long speech delivered by one character
Noun:	The name of a person, place or thing (concrete noun: something you can see/touch; abstract noun: an idea/feeling)
Oxymoron:	A figure of speech with two seemingly contradictory words used together
Pathos:	A persuasive device: the use of feelings or emotion to persuade someone
Patriarchal Society:	A society which is ruled by men
Prologue:	An introductory section to a play, novel or film
Pronoun:	A word which replaces a noun (e.g. I, she, he, it, they, we, you)
Purpose:	Why the text has been written; links to authorial intent
Simile:	Figurative language: making a comparison by saying something is *like* something else (e.g. the stars are *like* diamonds)
Soliloquy:	A monologue giving audiences insight into a character's private thoughts
Symbolism:	When an object/idea represents something deeper
Theatre:	A place where a play is performed to a live audience
Theme:	A reoccurring idea throughout the text
Tone:	The mood or emotion of the text
Verb:	An action or a doing word

Year 9 History Term 2 Knowledge Organiser: The Holocaust

The Holocaust was the mass murder of Jews under the German Nazi regime from 1941-1945. More than 6 million Jews along with other persecuted groups were systematically murdered.



ANTISEMITISM	Prejudice against Jews in either words or actions.
SYNAGOGUE	A building in which Jewish people worship and study their religion.
STEREOTYPES	A well-known idea or image of a person or idea that is held by a number of people
PROPAGANDA	A way of controlling the public attitudes.
PERSECUTE	To treat someone unfairly or cruelly over a long period of time because of their race, religion, or political belief.
UBERMENSCHEN	The Nazi's used this word for the Master Race. Meaning racially pure and of high standings. Also means Superhuman.
UNTERMENSCHEN	Nazis used this word. A person considered racially or socially inferior. Also means sub-human.
GHETTO	Walled of part of a city where Jews were forcibly moved too and forced to stay in.
GENOCIDE	To murder an entire race of people.
FINAL SOLUTION	The plan by the Nazis to murder every European Jew during World War Two.
CONCENTRATION CAMP	A place where people are concentrated and imprisoned without trial. Could also be called a labour camp.
DEATH CAMPS or EXTERMINATION CAMPS	The aim was to murder and completely destroy all the people in the camp.
SHOAH	Means 'calamity' in Hebrew. Jewish name for the Holocaust.
LIBERATION	The act or process of freeing a country or a person from the control of somebody else.

TIMELINE OF THE HOLOCAUST

- **Hitler is Chancellor and first camp built** — 1933
- **Nuremberg Laws removes Citizenship of Jews.** — 1935
- **Kristallnacht violence – Night of the Broken Glass** — 1938
- **Lodz Ghetto in Occupied Poland is sealed shut.** — 1940
- **Death camps are built and are used to murder people.** — 1941
- **Death camps liberated by Allies.** — 1945

Year 9 BTEC Dance Subject Term Knowledge Organiser

Component 1- Exploring the Performing Arts Jazz Dance

Students will gain a practical appreciation of practitioners' work in using existing performance material in dance. They will learn how they may respond to or treat a particular theme or issue. How they also use/interpret/modify a pre-existing style and how they communicate ideas to their audience through stylistic qualities.

Bob Fosse- choreographer

Characteristic of his style is a type of trio dance, with its forward thrust of hips, hunched shoulders, turned-in feet and sharp, jazzy movements enhanced by sound effects. Derbies and animated hands became trademarks of his work

- Fosses show-stopping ability came from the knowledge of how to build a number to a climax, to give it a beginning, middle and end – and his ability to do it with sex and humour.
- Fosse dancers must be able to isolate everything, right down to their eyeballs, elbows and fingers. When a Fosse dancer learns to focus her energy in stillness, she can grab the audience with a simple flutter of her fingers. "It should look like you're not working at all—but you'll come off stage sweating,"

Overview of key features:

- Sound effects (clapping hands, stamping feet, fsss sounds)
- Percussive rhythms
- Derbies and white gloves
- Angular posturing
- Shoulder rolling
- Finger stretching
- Dynamic use of lightening effects
- Percussive sounds which are a key feature of Jazz genre.
- Undercurrent of sensuality

CHICAGO focuses on the theme of celebrity and what people will do to achieve it. Neither Roxie nor Velma murder purely for publicity, but once they have they are eager to exploit their newly found fame to the full.

Historical context

The piece was set in 1924 and Chicago was based on real stories. In particular, the 1926 play by Maurine Dallas about the murders and trials of Belva Gaertner and Beulah Annen. This meant Chicago's press and public became riveted by the subject of homicides committed by women. The time of Vaudeville was a very popular art form in the 1920's consisting of a diverse series of short acts. In the 2000 film version before Velma goes on stage you can hear the director say "on in five" meaning that this was part of a Vaudeville variety show.

ROXIE HART- main character

As pretty as she is self centred, Roxie Hart's unrelenting search of fame and glory forms the spine of "Chicago". Not very bright and never thinking about the consequences of her actions, Roxie makes bad decisions throughout the show – all in the name of public recognition. Her wannabe vaudeville mind set lasts throughout the entire show.

Velma Kelly-main character

Tough, sexy, and sarcastic, Velma Kelly is a vaudeville performer who resides in Cook County Jail after she murdered her cheating husband and sister. Used to being the "main attraction", Velma fiercely competes with up and coming rival superstar Roxie for the attention of the press and to preserve her celebrity status. In Brechtian style, Velma often breaks the fourth wall and addresses the audience directly to explain certain events within the show and express herself in the style of Fosse.

Year Subject Term Knowledge Organiser 9: Photoshop

How images are represented by binary

What is a pixel?
The word pixel comes from 'picture element'. A pixel is a tiny coloured pixel square. Digital images are made up of lots of pixels. Each pixel in a digital image will need to be converted into binary.

What is binary?
Binary is a 2-base number system of 1s and 0s. The 1s and 0s represent electrical signals, 1 = on and 0 = off. All computer data (including digital images) is converted into binary in order for it to be processed. **Representing images**
Digital images are converted into binary so that the computer can process them. Each pixel in a digital image is made up of binary numbers. These binary numbers are processed by the CPU.

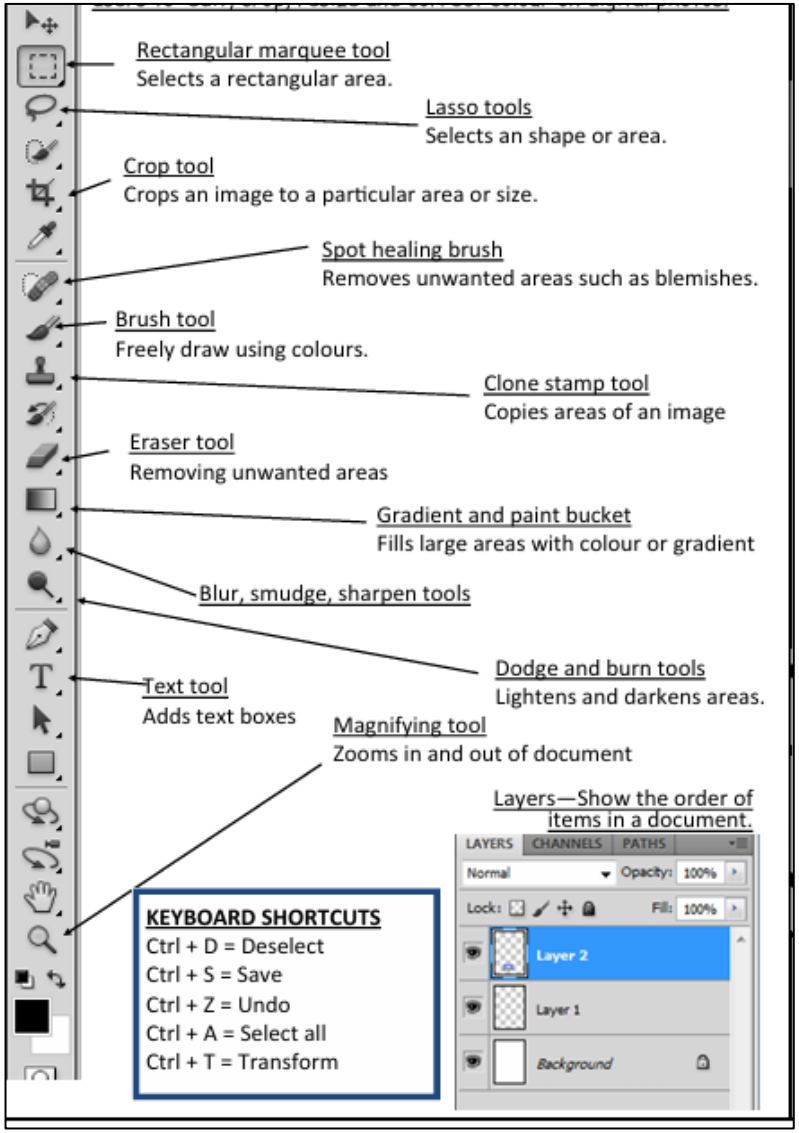
Representing images
Digital images are converted into binary so that the computer can process them. Each pixel in a digital image is made up of binary numbers. These binary numbers are processed by the CPU.

Types of Graphics

BITMAP:
Bitmap graphics are made up of pixels. Each pixel is stored on the computer as a series of 1s and 0s. When you take a photo with your smart phone it stores the digital image as a bitmap.

VECTOR
Vector graphics do not have any pixels. Instead they are made up of lines and shapes. When a vector is enlarged the lines and shapes are redrawn; making them great for resizing.

Photoshop Tools



MFL Knowledge Organiser Summer 1 Yr 9 El Colegio

A Tenses

PRESENT	-ar verbs	-er verbs	-ir verbs
I	-o	-o	-o
you	-as	-es	-es
he/she/it	-a	-e	-e
we	-amos	-emos	-imos
you (pl)	-áis	-éis	-ís
they	-an	-en	-en

	ser (to be)	estar (to be)	tener (to have)	ir (to go)
(yo)	soy	estoy	tengo	voy
(tu)	eres	estás	tienes	vas
(él/ella/usted)	es	está	tiene	va
(nosotros/as)	somos	estamos	tenemos	vamos
(vosotros/as)	sois	estáis	tenéis	vais
(ellos/ellas/ustedes)	son	están	tienen	van

B

Conditional tense- saying what you would do.

Infinitive verb

ESTUDIAR +

ía
ías
ía
íamos
íais
ían

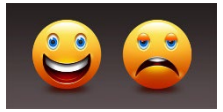
Opinions C

Odio

Detesto

Prefiero

Pronouns D



Me chifla(n)

Me interesa(n)

Me = me
Le = him/her
Nos = us

Me aburre(n)

No me interesa(n)

Connectives E

Primero	first
Luego	then
Normalmente	normally
A veces	sometimes
Por la mañana	in the morning
Por la tarde	in the afternoon

Complexity F

(No) Se debe= one must (not)
(No) Debo= I must (not)

(No) Se puede= One (can/ can't)
(No) puedo= I can/(can't)

No se debería= you wouldn't have to

Se debería= you would have to

Haría = I would do
Tendría= I would have
Se podría= you could

Adjectives G

favorito	*Favourite*
aburrido	*Boring*
difícil	*difficult*
Divertido/a	*Fun*
fácil	*Easy*
Importante	*important*
interesante	*Interesting*
Práctico/a	*Practical*
útil	*Useful*

H

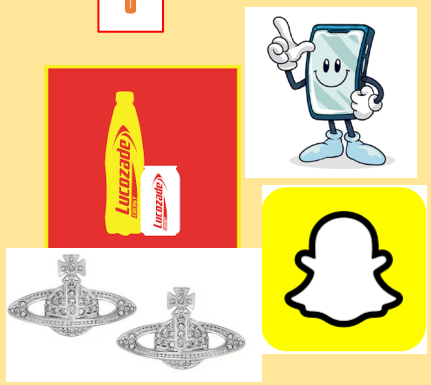
Muy = very
Bastante = quite
Un poco = A little bit
Demasiado=*too*
realmente= *really*

Year 9 El Instituto/ Colegio TOPIC VOCABULARY TRANSLATED

El teatro	drama
El dibujo	art
El espanol	Spanish
El inglés	English
El frances	French

La educación física	P.E
La geografía	Geography
La historia	History
La informática	ICT
La música	Music
La tecnología	Technology
Las ciencias	Science
Las matemáticas	Maths

I



K

Un día típico

Llego al colegio	I arrive at school
Las clases empiezan	lessons start
Hago mis deberes en la biblioteca	I do homework in the library
Voy al club de…	I go to … club
Hago actividades extraescolares	I do extra-curricular activites
Salgo de colegio	I leave school
Vuelvo a casa	I return home

La ropa de calle	own clothes
Mis zapatos de deporte	trainers
Hamburguesas/ el pollo frito	burgers/fried chicken
Bebidas energizantes	energy drinks
Joyas	jewellery
Mis amigos	my friends
Club de las redes sociales	social media club

Hacer cola en la cantina	queue in the canteen
Levantar la mano antes de hablar	put your hand up before speaking
Llevar uniforme	wear uniform
Comer chicle	chew chewing gum
Comer en las aulas	eat in classrooms
Llevar maquillaje	wear make up
Ir al baño durante las clases	go to the toilet in lessons
Usar el móvil	use your phone

Los verbos

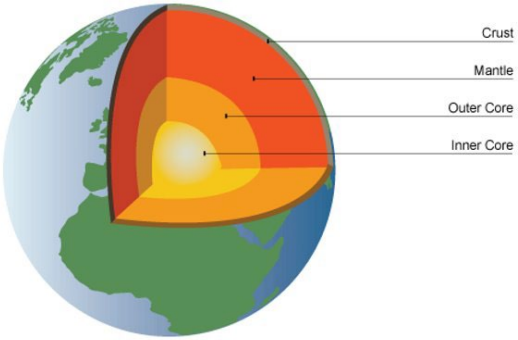
J

- Estudiar/ estudiaría
- Llevar/ llevaría
- Comer/Comería
- Ir/ Iría
- Usar/Usaría
- Deberse/ se debería
- Hacer/haría
- Tener/tendría
- Poderse/ se podría

Tectonics Knowledge Organiser

Structure of the Earth

The Earth has four main layers - the **inner core**, the **outer core**, the **mantle** and the **crust**.

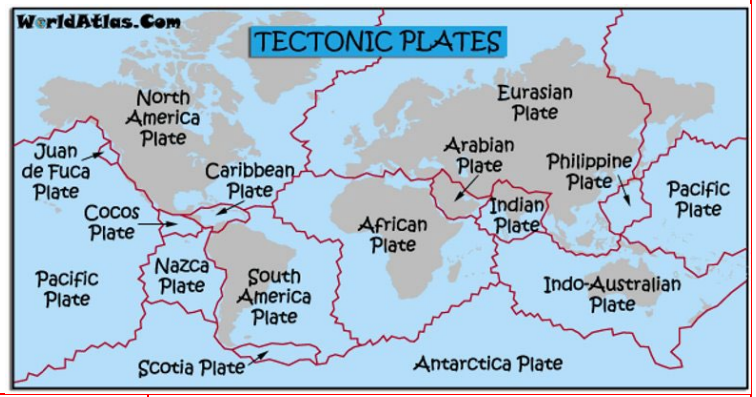


- The **inner core** is extremely hot and is a very dense solid.
- The **outer core** is 2,000 km thick and is a liquid.
- The **mantle** is semi-molten and about 3,000 km thick.
- The **crust** is the rocky outer layer; it is thin compared to the other sections, approximately 5 to 70 km thick.

Plate tectonics

Plate margin: *where two or more plates meet*
Convection currents: *movement within the Earth's mantle caused by the heat of the core*

The Earth's crust is broken up into huge slabs called plates. The plates float on the mantle and are constantly moving by **convection currents**. When these plates move, they bump into, move away from, or rub up against other plates at the **plate margins**. How these plates move in relation to other plates dictates what type of plate margin it is and helps us understand what types of hazards will occur there.

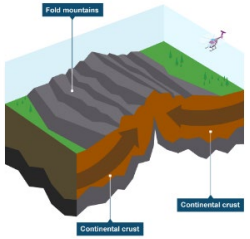


Constructive plate margin

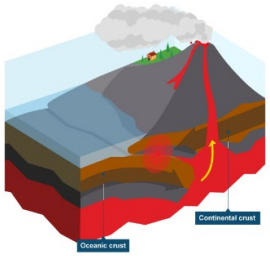
A constructive plate margin occurs when **plates move apart**. Volcanoes are formed as magma wells up to fill the gap, and eventually new crust is formed. Earthquakes occur here also. **E.g.** North American and Eurasian plates forming the mid-Atlantic Ridge.

Destructive plate margin

Destructive plate margins occur when tectonic plates move towards each other and collide. The effect this has depends on what kinds of plates are colliding:



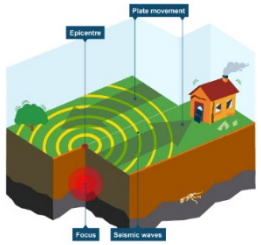
- <u>If two *continental* **plates collide**</u>, they are both buoyant and so cannot sink into the mantle. As a result, compression forces the plates to collide and form fold mountains. **E.g.** The Indian & Eurasian plates formed the Himalayas.



- <u>If an *oceanic* and a *continental* plate **move towards each other**</u>, the denser oceanic plate is subducted and sinks under the continental plate and into the Earth's mantle, where it is recycled. Earthquakes, fold mountains and volcanoes occur. **E.g.** The Nazca & South American Plates.

Conservative plate margin

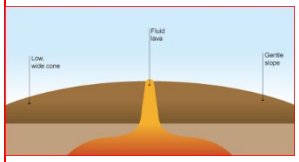
A conservative plate margin occurs where **plates slide past each other** in opposite directions, or in the same direction but at different speeds.
Friction is eventually overcome and the plates slip past in a sudden movement. The shockwaves created produce an earthquake.
E.g. The North American and Pacific plates forming the San Andreas Fault in California.



Tectonics Knowledge Organiser

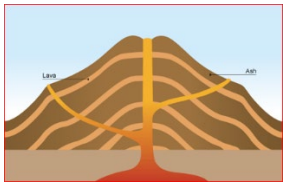
Volcanoes

Volcanoes are vents to the interior of the planet - they allow magma from the mantle to spill out as lava onto the Earth's crust. There are 2 types of volcanoes, shield and composite.

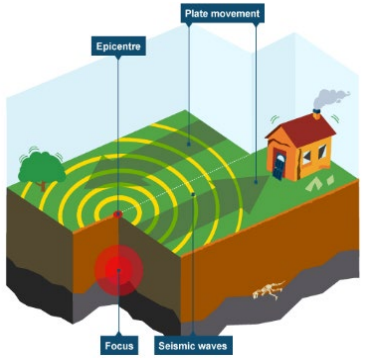


A **shield volcano** has gently sloping sides and runny lava that covers a wide area.

A **composite volcano** is steep sided and cone-shaped, it is made up of layers of ash and lava. The lava is sticky so it does not flow far.



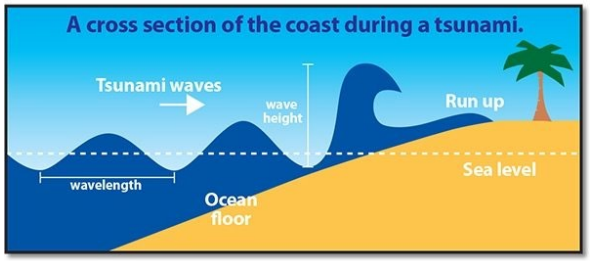
Earthquakes



Earthquakes are the sudden violent shaking of the ground. This happens because the Earth's plates are constantly moving. Sometimes, because of **friction**, plates try to move and become stuck. **Pressure** builds up because the plates are still trying to move. When the pressure is released, it sends out huge amounts of **energy** causing the Earth's surface to shake violently. The point inside the Earth's crust where the earthquake originates from is known as the **focus.** The earthquake's energy is released in **seismic** waves and they spread out from the focus. The **epicentre** is the point on the Earth's surface directly above the focus. The seismic waves are most powerful at the epicentre.

Tsunami

Tsunami is a Japanese word which means '**harbour wave**'. A tsunami is a large sea wave caused by the displacement of a large volume of water. They can be caused by earthquakes triggered by moving sections of the Earth's crust under the ocean. Tsunamis have many social, economic, and environmental impacts depending on where they hit and their size.



Case Study: Iceland

This volcano began erupting lava on 20th March 2010. Impacts of the eruption include:

-Melting of large amounts of ice which led to flooding in Southern Iceland
-Ash from the volcano contaminated their local water supplies
-All over Europe airplanes were grounded until the air cleared
-The ash deposited iron into the North Atlantic triggering a plankton bloom

Case study: Nepal vs Japan Earthquakes

	Nepal 2015 (LIC)	Japan 2011 (HIC)
Magnitude	7.8	9.0
Death Toll	8,632	15,894
Injured	19,009	6,152
Social Impacts	Hundreds of thousands made homeless	500,000 people evacuated
Economic Impacts	Loss of tourism (a major industry in Nepal)	56 bridges and 26 railways destroyed or damaged
Environmental Impacts	Triggered several avalanches	Triggered tsunami & nuclear meltdown
Cost to rebuild	$10/ £7.8 Billion	$309/ £189 Billion

Managing hazards

There are 3 things we can do to lessen the affects of earthquakes, the 3 Ps.

Prediction - Using technology to estimate when and where we think an earthquake is going to happen. **We often know where one will happen but it is difficult to figure out when it will.**

Protection - Putting measures in place to help protect people during an earthquake. The most important and common one is **building special buildings that will not collapse.**

Preparation - This is all about getting ready for when the next one comes. It includes **special drills and practices so people know what to do, and preparing materials in advance**.

What is Suffering?

Key terms

Human suffering	Suffering caused by humans e.g. shooting someone.
Natural suffering	Suffering caused by events which cannot be controlled by humans e.g. earthquakes.
Original sin	All humans are born with evil (the first sin) as a result of the fall of Adam and Eve.
Siddhartha Gautama	The leader of Buddhism (the Buddha).
Job	The Character in the Bible demonstrating why suffering occurs to Christians.

Crucial Commands:

Describe:Say in detail what something or someone is like, and the impact it has. E.g. Describe the the work of Christian Aid

Explain: Say why something or someone is important, and the impact it has. E.g. Explain the impact of the Crusades on society and religion.

Discuss: Write about at least two points of view and explain why these points of view are valuable or not. E.g. "What would the world be like without religion?"

Types of suffering:

Key definitions

Human/Moral – this is suffering caused by humans which can be sub-divided into intentional and ignorance

Intentional – this is suffering which is inflicted deliberately such as causing pain to others

Ignorance – this is suffering which you don't realise you are inflicting on yourself such as remaining friends with someone who is horrible to you

Natural –

This is suffering which occurs naturally in the world without the interference of humans

How do Christians understand suffering?

- There is no physical description of Jesus **anywhere** in the Bible.
- Artists want Jesus to look like themselves and their cultures to feel a kind of connection to Jesus.

What do Buddhists say about suffering?

Muslims believe that Allah (God) is the creator and the focus of our worship. They want to avoid people worshiping anyone apart from Allah, therefore it is easier to avoid images.

- Calligraphy
- Arabesque
- Vedic Squares

How can we overcome suffering?

Flags are printed with symbols and prayers or mantras. Each colour has a significance, they represent the five elements.

- Blue represents sky and space
- White is for the wind and air
- Red symbolises fire
- Green signifies water
- Yellow is for earth

What are some good solutions?

Lantern Floating Festival at the Shinnyo-en Buddhist Centre in Surrey.

- At the ritual nearly 1000 people made a lantern, writing a personal message or prayer of remembrance, appreciation and hopes, on a lantern. The lanterns were then lit – as a symbol of inner light – and floated together across the lake.

What is real happiness?

Creative expression is the ability to use our minds and imaginations to create something that represents ourselves. There are countless ways to express ourselves creatively, whether through music, visual art, crafting, writing, photography, drama, or movement.

Year 9 Subject Term Knowledge Organiser

Athletics

Knowledge

Be able to demonstrate my performance.
Show a range of skills in a competitive situation in track events 100m, 200m, 300, 400, 800m, 1500m and field events – throwing = Discus, Javelin, Shot Put – jumping = Long Jump, High Jump, Triple Jump.

Key Skills:

Running events

• Pre-race tactics • Changing and adapting your race tactics • Positioning in
the field, where to run in the pack, when to lead and when to follow (where appropriate) • Timing of kicking for the finish line • When to dip for
the finish line • Awareness of the rules and regulations of the event and
their application (including officials commands/signals

Jumping events

• Pre-event tactics • Tactics for qualifying jumps/Entry height and the choice of when to 'pass' on a height/ round • Changing and adapting your
jump tactics: • Consideration of weather conditions • Appropriate distance/number of steps chosen for run up • In competition check mark
adjustment • Awareness of the rules and regulations of the event and their
application (including officials commands/signals)

Throwing events

: • Pre-event tactics • Tactics for qualifying throws • Changing and adapting
your throw.

Key Content and Terms to learn:

RELAY: a race of teams of runners passing batons to each other on a team*
STARTING BLOCKS: blocks for keeping runner's feet in a fixed position at the start*
TRACK: an oval shaped piece of ground for athletes to run* TRACK SHOES
(TRACK SPIKES): sports shoes for running competitions on a track

Stretch and Challenge Task:

Try analysing the performance of yourself or a famous athlete.
What are their strengths and weaknesses what practices could they do to improve performance?

Year 9 Drama HT6 Knowledge Organiser

Summary of topic

Students will be understanding the requirements of devising drama from stimuli. They will need to work on exploration strategies to create 'real' drama from a range of different inspirational different media. They will understand what constitutes the combination of creating a performance from images, quotes, poems, news reports, music, lyrics, real life roles and iconic stories. They will develop their performance skills as an actor, designer and director.

Aims of the topic

To experience the process of creating your own play from scratch

Devising

Y9

Knowledge Organiser

Assessment & Performance Tips

The assessment is a group piece they have created using a practitioner influence.

- Face the audience at all times
- Speak loud and clear so everyone can hear you
- Try not to laugh and stay focused.
- Use a real range of movement skills.
- Add emotion to your performance.
- Make your performance believable.

DRAMA

Key Words

Performance	**Stimulus**
Rehearsal	Inspiration
Improvisation	Case study
Characterisation	
Creativity	

Skills & Definitions

Ensemble – Collaborated group performance.

Characterisation – The creating, development and performance of a created character.

Improvisation – Spontaneous acting and suggestions that further develop a performance.

Devised – Original created performance material, often using a stimulus.

Stimuli – The starting point e.g. picture, quote, word or song. You chose one.

Practitioner – Brecht or Artaud and how they influenced the performance.

Brecht – Famous for Political and Epic Theatre. (See practitioner knowledge organiser). Made the audience think and bring real change.

Artaud – Famous for Theatre of Cruelty (See practitioner knowledge organiser). Made the audience feel uncomfortable.

Genre – Physical theatre is NOT a practitioner, it is a STYLE of drama focused upon storytelling using movement.

Techniques – The key skills which are relevant to the practitioner or genre (see practitioner knowledge organiser).

Final performance – The end performance of the piece.

Rehearsal – The process of creating and developing your piece of theatre

Year 9 Abby Diamond Knowledge Organiser

Longdendale HIGH SCHOOL

Artist Research Page

A study of the artist's work has been included in their exact same style.

Interesting composition and background has been included.

Annotation has been included which demonstrates a personal response to the artist (not just copied from Wikipedia!)

Attempt to use the same material as the artist where possible and apply the medium in a similar way.

Pictures of the artists work has been cut out straight and glued in neatly.

70/30 rule has been applied!
70% of the work on your research page must be your own work, 30% included images of the artist work and any quotations.

Abby Diamond

Abby Diamond is a freelance illustrator and visual artist, living and working in Pittsburgh USA.

She uses ink and watercolour paints, and a variety of traditional mediums to create bright, colourful creatures, and whimsical beasts.

She draws constantly, and while paying close attention to details, she loves to splash around and experiment with her work.

Her main sources of inspiration is the natural world, backyard wildlife, early English illustrators Beatrix Potter and JJ Audubon.

Watercolour Techniques

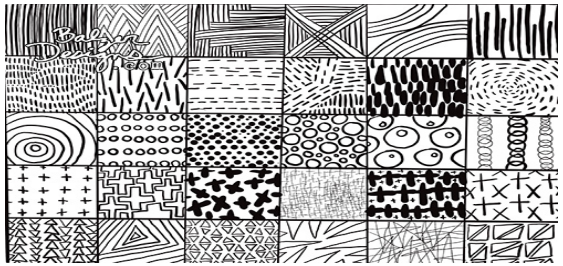
There are several different techniques when using watercolour paints, however, today you will be focusing on three techniques.

Wet-on-wet means that wet paint is applied to wet paper, or added to a wash of fresh wet paint.

Wet-on-dry simply means that you're applying wet paint onto dry paper, or wet paint onto an area of dry paint.

A **Graduated Wash** means that you use the wet-on-dry method and add water afterwards to create a blended gradient.

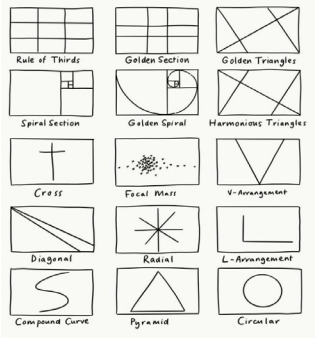
Mark Making Techniques



Mark making describes the different lines, dots, marks, patterns, and textures we create in an artwork.

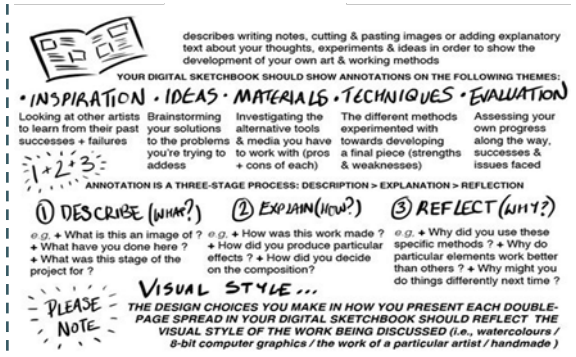
It can be loose and gestural or controlled and neat. It can apply to any material used on any surface: paint on canvas, ink or pencil on paper, a scratched mark on plaster, a digital paint tool on a screen, a tattooed mark on skin…even a sound can be a form of mark making.

Composition



Composition in art is the way in which different elements of an artwork are combined. In general, this refers to the key subjects of the artwork and how they are arranged in relation to each other.

Annotation



Year 9 CONFECTIONARY Knowledge Organiser

Longdendale HIGH SCHOOL

Artist Research Page

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Nikau Hindin

This artist is from New Zealand, she works with the topic of junk food, focusing on the excessive consumption of junk food by young people and the health risks that are linked to the consumption of additives and high calorie products. She uses 'mixed media' in her artwork, which includes pencil, paint, biro/pen, Indian ink, cardboard cut outs and stencils.

Nikau embraces new technology, using Photoshop to generate her compositions. There are sometimes beautiful textures in her work, created by thick, painterly layers. There is an uneasy feel in her work and a feeling of horror as you see the names of artificial additives and ingredients leaching through the painting surface.

Mono-Printing Technique

Below is a step-by-step guide for one method in creating a mono-print:

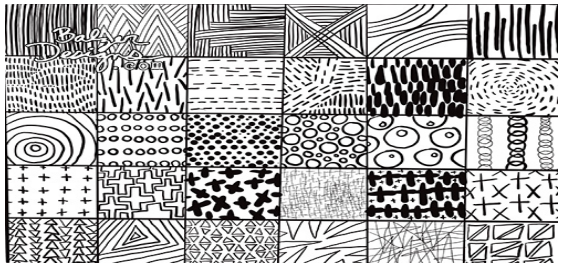
1) On a plastic sheet, roll out an even. tacky layer of printing ink. (You only need a small amount. (Roughly the size of a 5p coin).

2) Turn your COLLAGE over and place it face down on top of the ink, do not press down or lean on it.

3) Choose an image you wish to trace. (People eating food/different types of foods).

4) Place the image on top, draw over the top of your chosen image, picking out as much detail as you can but not taking too long. (Trace heavily but try not to lean on it).

Shading/Mark-Making



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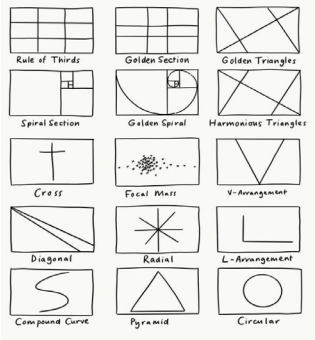

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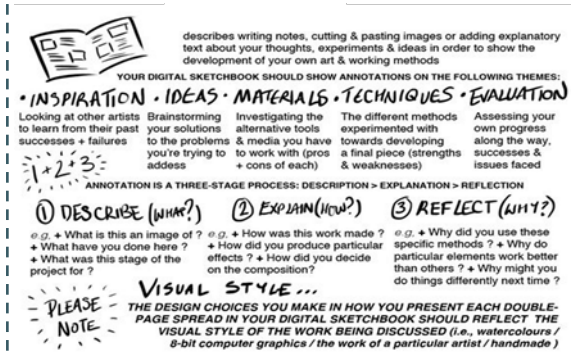


Year 9 Food

Food poisoning bacteria

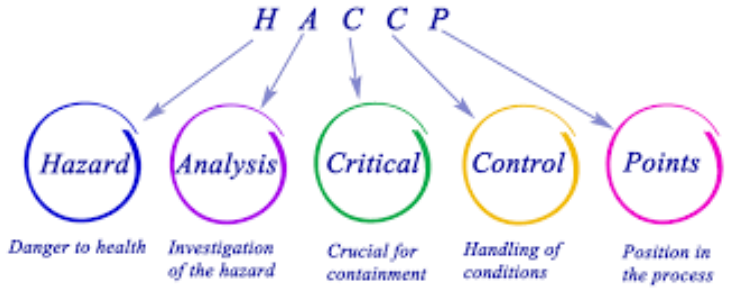
The main causes of food poisoning bacteria are:

- **Bacillus cereus:** found in reheated rice and other starchy foods.
- **Campylobacter:** found in raw and undercooked poultry and meat and unpasteurised milk.
- **Clostridium perfringens:** found in human and animal intestines and raw poultry and meat.
- **E-coli:** found in raw meat, especially mince.
- **Listeria:** found in polluted water and unwashed fruit and vegetables.
- **Salmonella:** found in raw meat, poultry and eggs.
- **Staphylococcus aureus:** found in human nose and mouth.

HACCP table

Here is an example of a HACCP table – it states some risks to food safety and some control points.

Hazard	Analysis	Critical Control Point
Receipt of food	Food items damaged when delivered / perishable food items are at room temperature / frozen food that is thawed on delivery.	Check that the temperature of high-risk foods are between 0°C and 5°C and frozen are between -18°C and -22°C. Refuse any items that are not up to standard.
Food storage (dried/chilled/frozen)	Food poisoning / cross contamination / named food hazards / stored incorrectly or incorrect temperature / out of date foods.	Keep high-risk foods on correct shelf in fridge. Stock rotation – FIFO. Log temperatures regularly.
Food preparation	Growth of food poisoning in food preparation area / cross contamination of ready to eat and high-risk foods / using out of date food.	Use colour coded chopping boards. Wash hands to prevent cross-contamination. Check dates of food regularly. Mark dates on containers.
Cooking foods	Contamination of physical / microbiological and chemical such as hair, bleach, blood etc. High risk foods may not be cooked properly.	Good personal hygiene and wearing no jewellery. Use a food probe to check core temperature is 75°C. Surface area & equipment cleaned properly.
Serving food	Hot foods not being held at correct temperature / foods being held too long and risk of food poisoning. Physical / cross-contamination from servers.	Keep food hot at 63°C for no more than 2 hours. Make sure staff serve with colour coded tongs or different spoons to handle food. Cold food served at 5°C or below. Food covered when needed.



Food and the law

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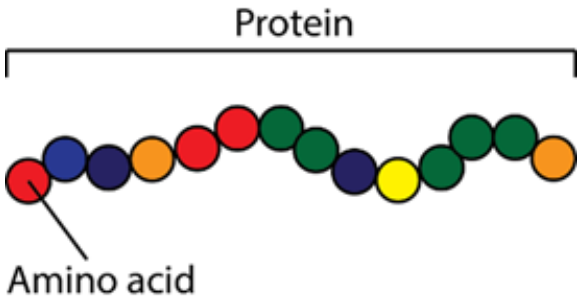
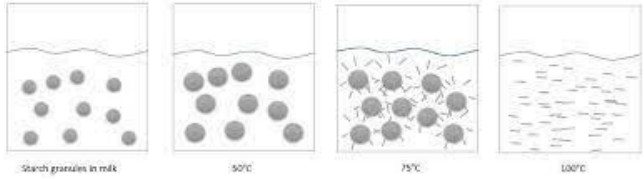


Proteins in Egg Whites | Denatured Proteins | Coagulated Proteins



Temperature control

Delivery	Storage	Preparation	Service
The temperature of high-risk foods must be checked before a delivery is accepted. The food should be refused if the temperatures are above the safe range. Refrigerated foods = **0-5°C** Frozen foods = **-22°C to -18°C**	High-risk foods must be covered and stored at the correct temperature. Temperatures must be checked daily. Refrigerator = **0-5°C** Freezer = **-22°C to -18°C** Unwashed fruit and vegetables must be stored away from other foods.	High risk-foods need to be carefully prepared to avoid cross-contamination. A food probe can be used to make sure that high-risk foods have reached a safe core (inside) temperature, which needs to be held for a minimum of two minutes. Core temperature = **70°C**	Food needs to be kept at the correct temperature during serving to make sure it is safe to eat. Hot food needs to stay hot and cold food needs to stay chilled. Hot holding = **63°C minimum** Cold holding = **0-5°C**

Year 9 Food

Food poisoning bacteria

The main causes of food poisoning bacteria are:

- **Bacillus cereus:** found in reheated rice and other starchy foods.
- **Campylobacter:** found in raw and undercooked poultry and meat and unpasteurised milk.
- **Clostridium perfringens:** found in human and animal intestines and raw poultry and meat.
- **E-coli:** found in raw meat, especially mince.
- **Listeria:** found in polluted water and unwashed fruit and vegetables.
- **Salmonella:** found in raw meat, poultry and eggs.
- **Staphylococcus aureus:** found in human nose and mouth.

HACCP table

Here is an example of a HACCP table – it states some risks to food safety and some control points.

Hazard	Analysis	Critical Control Point
Receipt of food	Food items damaged when delivered / perishable food items are at room temperature / frozen food that is thawed on delivery.	Check that the temperature of high-risk foods are between 0°C and 5°C and frozen are between -18°C and -22°C. Refuse any items that are not up to standard.
Food storage (dried/chilled/frozen)	Food poisoning / cross contamination / named food hazards / stored incorrectly or incorrect temperature / out of date foods.	Keep high-risk foods on correct shelf in fridge. Stock rotation – FIFO. Log temperatures regularly.
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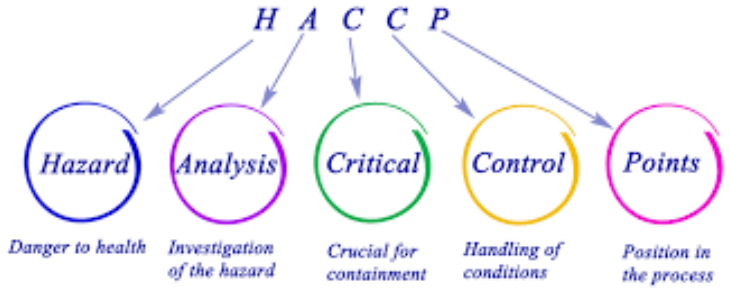

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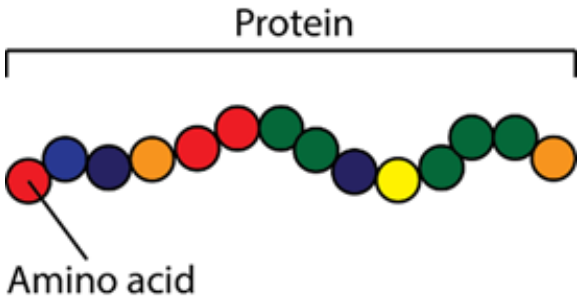

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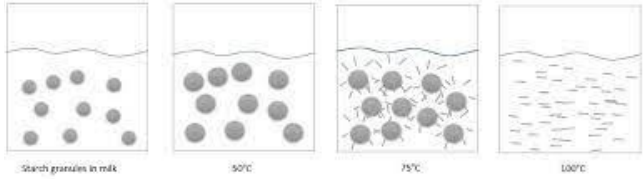

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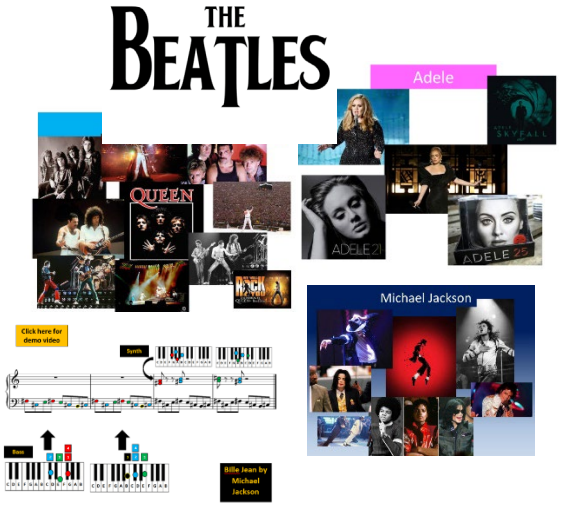
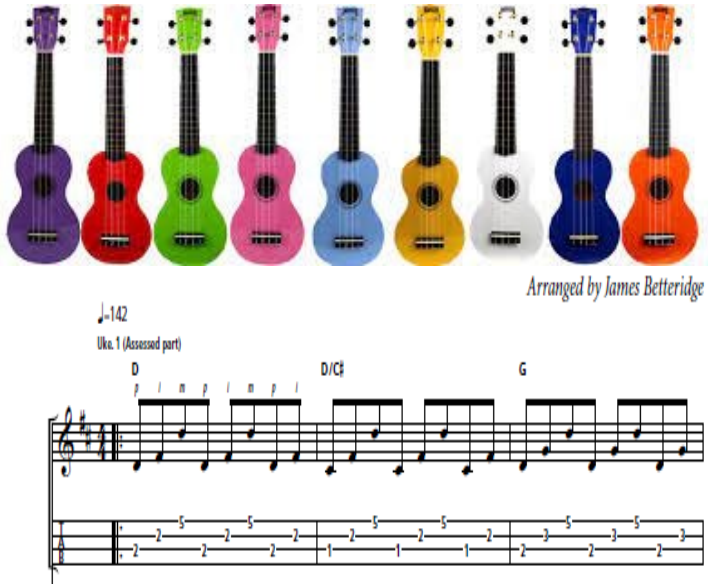
CLASs CONCERT





Pick your topic

Recap

Rehearse

Perform